

What is claimed is:

1 1. A method comprising:
2 importing environment information of a target database system into a test system,
3 the environment information comprising random sample statistics of the target database
4 system;
5 storing the random sample statistics in a storage location; and
6 using the random sample statistics in performing query plan analysis for a given
7 query in the test system.

1 2. The method of claim 1, wherein importing the random sample statistics comprises
2 importing random sample statistics from a selected segment of the target database
3 system.

1 3. The method of claim 2, wherein the target database system comprises plural
2 access modules, wherein importing the random sample statistics comprises importing the
3 random sample statistics associated with less than all of the access modules.

1 4. The method of claim 3, wherein importing the random sample statistics comprises
2 importing the random sample statistics associated with a randomly selected one or
3 randomly selected ones of the access modules.

1 5. The method of claim 2, wherein importing the random sample statistics comprises
2 importing at least some of the following information: database name, base table name,
3 number of rows in the base table, number of indexes for the base table, minimum row
4 length in the base table, maximum row length in the base table, secondary index name,
5 number of rows in a secondary index table, and average row size of the secondary index
6 table.

1 6. The method of claim 1, wherein importing the environment information
2 comprises importing the environment information of a target database system having
3 plural access modules that manage concurrent access of plural portions of data stored in
4 the target database system.

1 7. The method of claim 6, wherein importing the environment information further
2 comprises importing information pertaining to a configuration of the target database
3 system.

1 8. The method of claim 6, wherein importing the environment information further
2 comprises importing cost-related information of the target database system.

1 9. The method of claim 7, wherein importing the cost-related information comprises
2 importing information comprising at least some of the following: number of nodes in the
3 target database system, number of CPUs per node, number of access modules per node,
4 an amount of memory allocated per access module, disk access speed, and network
5 access speed.

1 10. The method of claim 1, further comprising emulating an environment of the target
2 database system using the random sample statistics, wherein performing the query plan
3 analysis comprises performing the query plan analysis in the emulated environment.

1 11. The method of claim 10, wherein emulating the environment comprises emulating
2 the environment at one of plural emulation levels, the plural emulation levels comprising
3 a system level and a user session level.

1 12. The method of claim 10, further comprising generating a full set of statistics from
2 the random sample statistics.

1 13. The method of claim 12, further comprising invoking an optimizer to use the full
2 set of statistics to perform the query plan analysis.

1 14. The method of claim 1, further comprising using an SQL DIAGNOSTIC
2 statement to identify random sample statistics to capture.

1 15. The method of claim 14, further comprising using another SQL DIAGNOSTIC
2 statement to set random sample statistics in the storage location.

1 16. A test system comprising:
2 an interface to receive environment information associated with a target database
3 system, the environment information comprising at least one of the following: sample
4 statistics collected from a segment of the target database system, and cost-related
5 information pertaining to a configuration of the target database system;
6 a storage system to store the environment information; and
7 an optimizer adapted to determine a query plan in response to a given query in an
8 environment based on the environment information.

1 17. The database system of claim 16, wherein the target database system comprises
2 plural access modules to manage respective portions of data stored in the target database
3 system, and wherein the sample statistics comprise sample statistics collected from less
4 than all the access modules in the target database system.

1 18. The test system of claim 17, wherein the sample statistics comprise sample
2 statistics collected from randomly selected one or more of the access modules.

1 19. The test system of claim 17, wherein the sample statistics comprise at least some
2 of the following information: database name, base table name, number of rows in the
3 base table, number of indexes for the base table, minimum row length in the base table,
4 maximum row length in the base table, secondary index name, number of rows in a
5 secondary index table, and average row size of the secondary index table.

1 20. The test system of claim 17, wherein the cost-related information comprises at
2 least some of the following information: number of nodes in the target database system,
3 number of CPUs per node, number of access modules per node, an amount of memory
4 allocated per access module, disk access speed, and network access speed.

1 21. The test system of claim 16, the storage subsystem to store a system table
2 containing the sample statistics.

1 22. The test system of claim 21, wherein the storage subsystem further comprises a
2 cache and a global configuration file, the test system further comprising a controller
3 adapted to load the sample statistics from the system table to one of the cache and global
4 configuration file.

1 23. An article comprising at least one storage medium containing instructions that
2 when executed cause a system to:

3 extract random sample statistics from one or more tables of the target database
4 system; and

5 store the random sample statistics in a predetermined location for importing to a
6 test system to enable emulation of an environment of the database system.

1 24. The article of claim 23, wherein the instruction when executed cause the system
2 to present a graphical user interface having plural input elements activable by a user to
3 perform the export and import tasks.

1 25. The article of claim 24, wherein the instructions when executed cause the system
2 to issue a first SQL DIAGNOSTIC statement to the target database to extract random
3 sample statistics from a segment of the target database system.

1 26. The article of claim 25, wherein the instructions when executed cause the system
2 to issue a second SQL DIAGNOSTIC statement to set the exported random sample
3 statistics in a storage location of a test system.

1 27. The article of claim 24, wherein the instructions when executed cause the system
2 to:
3 present a screen displaying the random sample statistics; and
4 accept user input to edit the random sample statistics

1 28. The article of claim 23, wherein the instructions when executed cause the system
2 to extract cost-related information pertaining to a configuration of the target database
3 system.

1 29. The article of claim 28, wherein the cost-related information comprises at least
2 some of the following information: number of nodes in the target database system,
3 number of CPUs per node, number of access modules per node, an amount of memory
4 allocated per access module, disk access speed, and network access speed.

1 30. An article comprising at least one storage medium containing instructions that
2 when executed cause a system to:
3 import random sample statistics of a target database system;
4 store the random sample statistics in a storage location;
5 generate a full set of statistics from the random sample statistics; and
6 use the full set of statistics in selecting a query plan in response to a given query.

1 31. The article of claim 30, wherein the instructions when executed cause the system
2 to invoke an optimizer to use the full set of statistics in selecting the query plan.